

AMENDMENTS TO THE CLAIMS:

Claims 1-3, 12 and 15-18 are presently pending. Claims 1-3 are amended herein. Claims 13 and 14 are cancelled herein without prejudice or disclaimer. Claims 15-18 are added herein. This listing of claims will replace all prior versions, and listings of claims, in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A method for identifying nucleotides at one or more base positions in a plurality of target nucleic acids acid molecules, comprising:
 - synthesizing extension products of the target nucleic acid molecules in the presence of chain terminating nucleotides and mass-matched nucleotides;
 - determining the mass of each extension product; and
 - calculating a mass shift from a period for the mass of each extension product, whereby the nucleotides in the target nucleic acid molecules are identified by determining the nucleotide that corresponds to each mass shift;
 - wherein the target nucleic acid molecules are polymorphic or mutant sequence variants of a gene or portions thereof.
2. (Currently Amended) The method of claim 1, wherein the mass-matched nucleotides are ~~mass-matched deoxynucleotides that~~ are identical.
3. (Currently Amended) The method of claim 1, ~~[[a]]~~ wherein one or more of the mass-matched ~~deoxynucleotide is~~ nucleotides is/are deoxyinosine, 5-nitroindole, 3-nitropyrrole, 3-methyl 7-propynyl isocarbostyryl, 5-methyl isocarbostyryl or 3-methyl isocarbostyryl.
- 4.-11. (Canceled)
12. (Previously Presented) The method of claim 1, wherein the chain terminating nucleotides are mass-matched.
13. (Canceled)
14. (Canceled)
15. (New) The method of claim 1, wherein the target nucleic acid molecules are polymorphic sequence variants
16. (New) The method of claim 15, wherein the difference in sequence between the variants is a single nucleotide polymorphism.

17. (New) The method of claim 1, wherein the target nucleic acid molecules are mutant sequence variants.

18. (New) The method of claim 17, wherein the difference in sequence between the variants is an insertion or a deletion.